

Article

# MODULARISATION AS A WINNING FORMULA

– and a pivotal element in  
your business strategy

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Today, most companies operate based on a business strategy proclaiming reduction of complexity, faster time to market, greater ability to innovate or less cost in operations. However, not many companies explicitly state modularisation as a winning formula even though this approach and mindset might be part of the answer. Therefore, we believe that modularisation needs to be a pivotal element in your business strategy to drive your company towards future success.

Modularisation is about designing your products based on intelligently designed modules that can be reused and configured to accommodate customers' needs and at the same time reduce complexity and optimise resources in the company while still providing the customers with a wider range of opportunities.

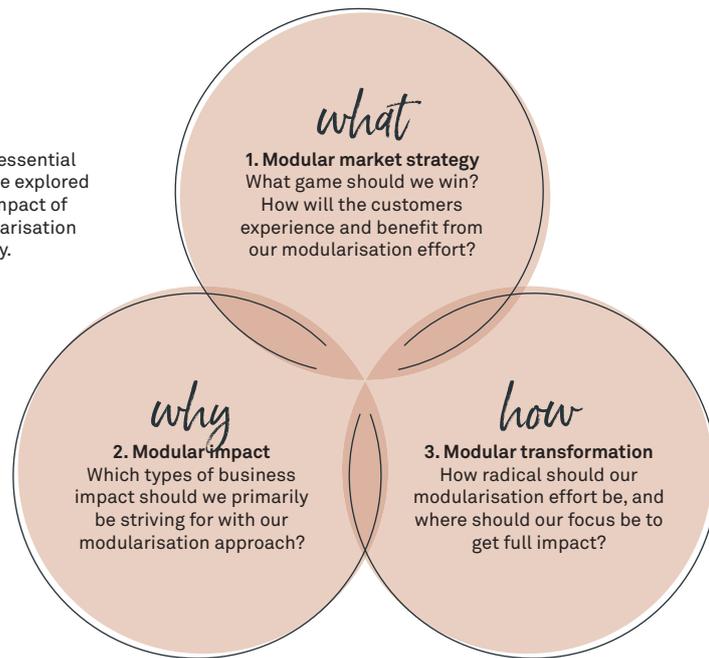
However, before harvesting the great benefits of modularisation, you need to

explore three essential areas and make modularisation a pivotal element in your overall business strategy.

## Three essential areas to explore

To ensure full impact of applying modularisation in your company, there are three essential areas that you need to explore and some related fundamental questions that need to be answered.

Figure 1: Three essential areas need to be explored to ensure full impact of applying modularisation in your company.



### Select the right modular market strategy

A modular market strategy should give answers to how customers will experience and benefit from the modularisation effort simultaneously with outlining the perspective on how the company will benefit from it.

In general, there are four different modular market strategies that vary with the increased experience of individualisation.

The first strategy is to provide the market with standard variants where the product range is based on a standard platform with modular solutions. The customers will not necessarily experience the modular approach but will be given the opportunity to choose from a fixed range of product variants with very competitive prices, e.g. home electronics. The company will utilise the modular structure to create additional scale in sourcing and production and at the same time reduce uncertainty and resources for development of new product variants based on reused modules from the platform.

The second modular market strategy is to provide the market with individual products within well-defined variants – also known as mass customisations.

That is for instance cars. The customers will be given numerous opportunities to individualise the final solution but only within well-defined boundaries and predetermined parameters. The modular idea and price impact are now more visible to the customer, and customisation of own solutions will typically be guided by a strict configuration process. The company will benefit from this market strategy by being able to build an end-to-end integrated business system based on a modular architecture able to deliver customised solutions on an industrial scale. This will often come with a high degree of automation in all process steps.

The third modular market strategy is to provide the market with individual project deliveries with special solutions but based on a modular platform. This is also known as “one-off” projects; however, they are executed in a more intelligent way. That could for instance be kitchens or similar products. The customers will be given individually designed solutions based on individual needs but at an affordable price level due to standard “building blocks”. The company will benefit from this modular market strategy by being able to align all functions from proposal via engineering, manufacturing, delivery and aftersales to the modular structure to take out costs along the entire value chain.

Modularisation as a winning formula – and a pivotal element in your business strategy

The last modular market strategy is to provide the market with a solution which core idea is to appear modular in the customers' use and experience. That could for instance be construction toys such as LEGO or sound systems such as Sonos. The customer will experience the modular features during use of the product, where the product can easily be expanded, maintained or replaced to give the customer even more value. The company can benefit from this market strategy by being able to continue to add new experiences and opportunities to keep customers loyal and increase life-time value of customer. Furthermore, it is possible to manage forward and backward compatibility to balance customer experience, costs and opportunities for new sales.

First, the company could focus on customer and sales impact, where modularisation is a key enabler for increased value for the customer. A well-designed and consequently implemented modular structure will give your customers an experience of a customised solution and your salespeople better opportunities for fulfilling customers' varying needs without a similar increase in complexity internally. Configuration systems, ERP systems, order processes etc. will appear significantly simpler when based on a modular product architecture. Furthermore, modularisation holds the potential to extend and increase product value for the customers through retrofits, extensions, value-adding extras etc. and provides the basis for new business and pricing models based on services, upgrades, consumables etc.

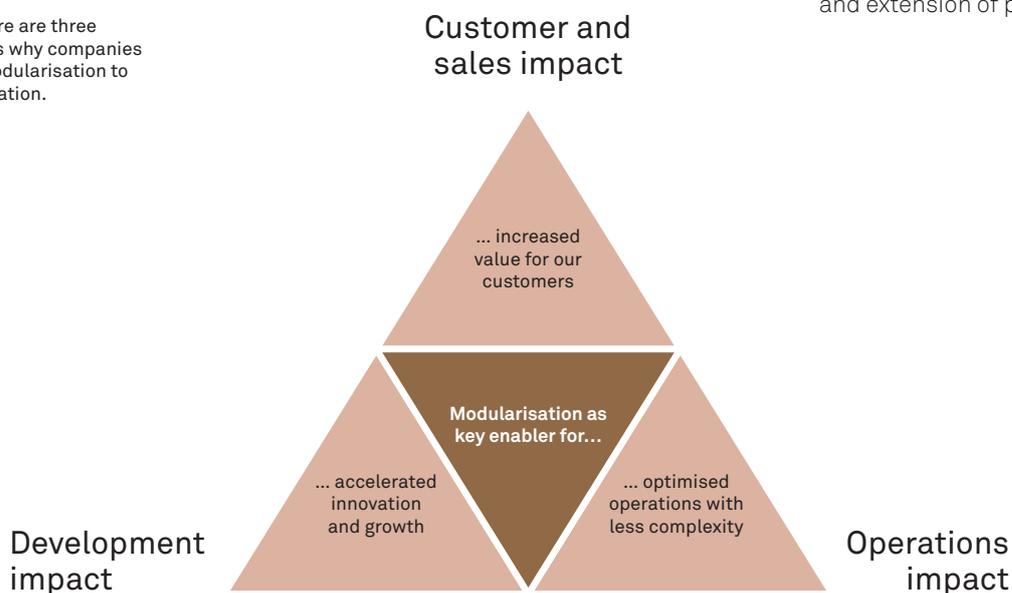
**Be explicit on the modular impact**

When the modular market strategy has been explored and defined, it might be obvious which type of business impact the company should be striving for. However, it might not be clear to all involved parties and does depend on the given context and standing point. Therefore, we do see three types of reasons for why companies should introduce modularisation to their organisation.

To summarise, some of the benefits that can be achieved by having a customer and sales impact focus are:

- Increased **flexibility** to meet and handle new requirements through easy customisations
- Increased perceived **value** of products by raising quality and reduction of variant cost
- Increased ability and **ease** of upgrading and extension of product life and value

Figure 2: There are three main reasons why companies introduce modularisation to their organisation.



## Case example



### Product assortment optimisation benefitting customers and the bottom line

A leading supplier of specialised chemicals

#### The situation

The client was a leading supplier of specialised chemicals with a portfolio of acquired products and own development. Their assortment was huge with significant overlaps, which gave a complex image to customers and salespeople.

Salespeople needed to be skilled, as choosing the right chemical is essential to the quality of the result when applying the chemical. Also, customers had incorporated the product specification into their own solution, making it hard to remove any products from the range.

The wide product range gave a high complexity in planning and stock-keeping, resulting in high costs and many loss-making products.

#### The solution

To solve the complexity issue, the client introduced a streamlined product port-

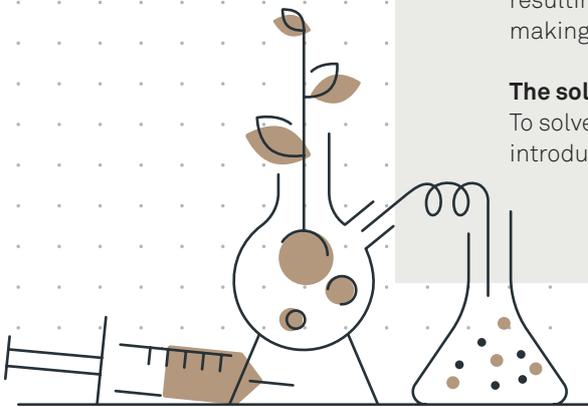
folio based on a combined outside-in and inside-out perspective. Former regional platforms were replaced with centralised definition of product platforms, and they created a facilitated selection guide to help choose the right product. In addition, salespeople received significant training and technical backup.

The client also formulated a clear value proposition per product group, distinguishing the product group from other product groups, and they introduced structured conversion plans at customer and product level to ensure the customer of performance and quality of new product instead of existing solution.

#### Impact

The project reduced complexity significantly, thereby reducing costs. It made a 128% improvement in revenue per SKU and a significant reduction of number of SKUs. It had an effect on scalability and made it faster to introduce new products at a global level.

Customer satisfaction improved, and the project built higher customer lock and protection against competitors.



Second, the company could focus on development impact, where modularisation is a key enabler for accelerated innovation and growth. Modularisation holds the potential to accelerate growth in a profitable way through shorter development cycles and additional product launches. The productivity of the innovation and development effort will increase significantly through more reuse of knowledge and solutions, and so will the hit rate and quality. Furthermore, many high-paced growth companies struggle with onboarding of new employees and application of new

technologies in an efficient way. That is where a modular approach can play a vital role. To summarise, some of the benefits that can be achieved by having a development impact focus are:

- Introducing significantly **more products** per year with higher hit rate
- Staying **efficient** in product development when the organisation is growing
- Increasing **competitiveness** of products relative to competitors and user needs

## Case example



### Boosting the number of product launches to meet a huge growth potential

A fast-growing medtech company

#### The situation

The client is a fast-growing medtech company, market leading within its niche, that develops single-use equipment for the healthcare industry.

The company takes products produced by well-known healthcare providers and changes them into single-use products instead of multiple-use products, which is a powerful tool to stop the spreading of infectious diseases. The demand for single-use products is skyrocketing, and the big players in the marketplace are trying to accommodate going from multiple use to single use. Therefore, competition will ultimately increase in the future.

#### The solution

To meet the huge growth potential within the niche market, the company needed to boost the number of product launches and be more innovative, and so the company embarked on a large modular transformation journey to prepare the organisation for future growth. The development organisation introduced value streams horizontally in the organisa-

tion to own specific customer core needs and application areas, whereas module teams were introduced horizontally to foster maximum reuse of all the great solutions and to act as knowledge hubs. Module teams own the development and maturation of new technologies into the module, which enables the value streams to succeed faster with their projects.

The company aligned the overall product architecture towards customer core needs and matched it with equal module teams and owners to support the development projects in the value streams, accelerating go-to-market timeline by reuse and integration of known solutions.

Also, they introduced new roles and responsibilities to the new organisational setup and changed the existing allocation scheme to also prioritise long-term investment.

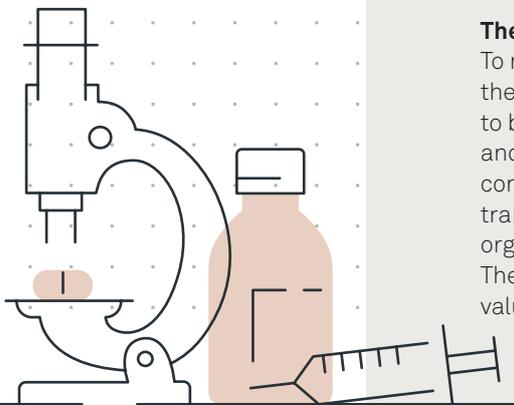
#### Impact

The projects accelerated product development, boosting the number of product launches per year. Also, they increased the level of innovation due to strong customer focus, and reuse of known solutions with lesser risk resulted in a higher hit rate of product development and less time wasted on developing almost equal solutions simultaneously.

Last, the company could focus on operations impact, where modularisation is a key enabler for optimised operations with less complexity. Most of the lifecycle cost of a product is decided through the design phase. Modularisation is a very powerful tool to reduce complexity and costs throughout the organisation: sales and order processing, procurement, production, distribution and service operations as well as administration. The driver behind the huge potential is that modularisation of the product makes the individual process task easier with less

added complexity for the other functions. To summarise, some of the benefits that can be achieved by having an operations impact focus are:

- Improving **quality** and reducing complexity through reuse of proven solutions
- Better **scalability** – meaning lower unit costs and better capacity flexibility
- Increasing supply **responsiveness** and flexibility to react to customer orders



## Case example



### Developing/using standards and platforms to reduce complexity and optimise operations

A European producer of building materials

#### The situation

The client was a European producer of materials for the building industry that had completed several acquisitions of minor companies with different brands and value propositions in the marketplace. The enormous diversity of products resulted in a huge internal complexity with more than 50 different product platforms with limited reuse and many with an early customisation of variants adding to the complexity.

The huge number of brands, products and variants was also directly reflected in the amount of production sites and the actual floor layout. This decreased the overall profitability of producing the products on the site. Unintendedly, the internal complexity was reflected towards the customers who had had a bad user experience when figuring out which brand, product or variant would fulfil their specific needs.

#### The solution

The company needed to improve the efficiency and profitability of development and operations and to increase the overall user experience. Consequently, they initiated a corporate complexity reduction programme across all brands, products and variants.

The many brands were rationalised into only one brand within each niche serving one unique selling point, and the unique platforms and their variants were either consolidated or abandoned. The product platforms that remained were redesigned to achieve a higher level of modularisation, resulting in increased reuse of solutions and specific components across platforms. This led to optimised operations on all production sites.

To prevent complexity from rising again, the company created a common solution catalogue for the entire group, describing rules and processes of how to develop and secure common and standardised solutions in the future.

#### Impact

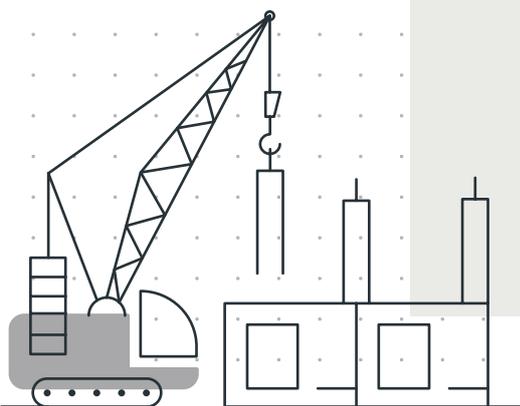
Through a set of simple rules and processes, the project created a strict focus on fighting future complexity and established a common language and mindset across the entire company to reduce complexity in all activities. Resultingly, the level of complexity became both manageable and sustainable.

Additionally, the project created more simple layouts on production sites with increased profitability and clear market focus, and due to intense reuse of solutions and specific components across platforms and brands, the company benefitted from economies of scale.

### Define how radical the modular transformation should be

The chosen modular market strategy and selected desired modular impact give you the foundation for discussing how radical the modularisation effort should be and

where to focus to get the full impact. Typically, it is a large transformation that imposes organisational and process changes and requires a cross-functional effort to unleash the full potential. We call it a journey because it is so much more than “just” redesigning your products.



Modularisation as a winning formula – and a pivotal element in your business strategy

## “WHAT IS THE CORE FOCUS OF YOUR MODULAR STRATEGY AND TRANSFORMATION?”

The specific modularisation journey will differ significantly depending on your starting point and your key objectives and rationales for applying modularisation to your organisation. However, it will often be beneficial to start the journey with a short pre-analysis and assessment to scope and direct the modular effort to become a

more modular-based company with lower complexity, better market appeal and higher efficiency.

Figure 3: Several “to-the-point” analyses help you scope and direct your modularisation journey.

Why are we doing it?	What is our starting point?	What could the new future be?
 <p>Impact case modelling from the three perspectives: Customer, Development and Operation and accessing primary goals.</p>	 <p>Create fact pack on product range, variants and growth in both.</p>	 <p>Model 2-3 alternative product architectures and make high-level evaluation of feasibility and impact.</p>
 <p>Strategic rationale and logic – deriving a first-cut modular strategy from the overall corporate strategy and goals.</p>	 <p>Evaluate current reuse ratio at product structure, “module” and component level.</p>	 <p>Map ideal future sales, customisation, delivery and customer application process based on full modularisation.</p>
 <p>Interview-based mapping of issues to be solved/reduced through a modularisation effort.</p>	 <p>Make high-level evaluation of product profitability across product and variant range.</p>	 <p>Map ideal future operations setup and sourcing, stock-keeping, production and test processes based on full modularisation.</p>

## ABOUT IMPLEMENT

Implement Consulting Group has an extensive practice around business and product development. We are committed to leaving organisations and their people in a truly better place – more ready for change, more engaged and better equipped for creating a better future.

Implement is headquartered in Copenhagen, and with offices in Aarhus, Stockholm, Malmo, Oslo, Zurich and Munich, our heart is in the North. With 900 consultants, multinational clients and worldwide projects, we offer expertise with a global perspective.

## FAST FACTS

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